

Application No.:09/683,795
Amendment dated: October 15, 2003
Reply to Office Action of July 16, 2003

b.) Remarks

1. Claims 1-18 are pending in the application. Claims 12-18 are allowed. Claims 1-7, 9 and 10 are rejected. Claims 8, 11 are objected to.

35 U.S.C. 102(b)

2. Independent Claim 1 and dependent Claim 6 were rejected under 35 USC 102(b) over U.S. Patent 5, 795,295 to Hellmuth et al. ("Hellmuth"). Independent Claim 1 was amended and for the foregoing reason is believed to be patentable over Hellmuth.

3. It is well established that a claim is anticipated under 35 U.S.C. §102, only if each and every element of the claim is found in a single prior art reference.¹ Moreover, to anticipate a claim under 35 U.S.C. §102, a single source must contain each and every element of the claim "arranged as in the claim."^{2,3} Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference.⁴ If each and every element of a claim is not found in a single reference, there can be no anticipation.

4. Applicant respectfully asserts that Hellmuth does not anticipate each and every element of the invention claimed in amended Claim 1, including the steps of providing a confocal scanning microscope and performing an analytical operation on the structure. More specifically, performing an analytical measurement operation on the structure imaged in a confocal microscope and reproduced on a display in a three-dimensional form could be found nowhere in Hellmuth. Col 11, lines 48-51 of Hellmuth referred to by the Patent Office relate to a surgeon observing a cross-section of a patient's brain on a screen, which helps the surgeon "locate nerves and blood vessels concealed by brain tissue or locate a brain tumor". An operation in Hellmuth refers to a surgical operation, not an operation of further analyzing the image in a mathematical way. Hellmuth further

¹ *Veregal Bros. v Union Oil Co. of California*, 814 F.2d 628, 631, 2USPQ2d 1051, 1053 (Fed. Cir. 1987).

² *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984).

³ *Lewmar Marine Inc. v. Barent, Inc.*, 827 F.2d 744, 747, 3 U.S.P.Q. 2d 1766, 1768 (Fed. Cir. 1987), cert. denied, 484 U.S. 1007 (1988).

⁴ *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Application No.:09/683,795
Amendment dated: October 15, 2003
Reply to Office Action of July 16, 2003

states that "MCM-computer-system 500 can create a boundary by using analytic techniques which are well known in the art for detecting the boundary between areas of different intensity" and cutting tissue along such a boundary (Col. 11, lines 60-67, Col. 12, lines 1-2 of Hellmuth). To the contrary, the analytical measurement capability of the present invention as claimed in Claim 1 does not relate to detecting or visualizing a 3-dimensional structure based on the contrast between different areas in the image. As an example of the claimed invention, paragraph 57 describes an analytical operation as determination of the geometrical length between two positions in an image, not an operation of cutting the brain tissue by observing areas of different contrast, as described in Hellmuth. Therefore, Hellmuth does not anticipate amended independent Claim 1, allowance of which is respectfully requested.

5. Moreover, concerning Claim 6 the Patent Office states that Hellmuth determines a geometric distance between two positions in an imaged volume, citing Col. 10, lines 6-17. Upon close examination of Col. 10, lines 6-17, as well as the whole Hellmuth patent, Applicant was unable to find any teaching or hint to an analytical operation, such as measuring a geometrical distance. Specifically, Col. 10, lines 6-17 refer to a comparison of the optical length of the path (also called the optical path, Col. 6, lines 33-38, Col. 6, lines 64-67, Col. 7, line 1) along which the radiation reflected from the patient's brain travels with the optical length of the radiation traveling along a reference path. The length in Hellmuth is not a geometrical length between two positions in an image, but the length of either a reference optical path or a reflected optical path, which Hellmuth describes as having to comply with a condition of being no greater than a coherence length of the radiation sources for the reference and reflected radiation to interfere. (Col. 6, lines 64-67, Col. 7, line 1). Therefore, the length of an optical path in Hellmuth has nothing to do with measuring a distance between two geometrical positions in a displayed image, as claimed in Claim 6 of the present application. Therefore, Claim 6 is not anticipated by Hellmuth. Moreover, Claim 6 depends off independent allowable Claim 1. Allowance of Claim 6 is therefore respectfully requested.

Application No.:09/683,795
Amendment dated: October 15, 2003
Reply to Office Action of July 16, 2003

35 U.S.C. 103(a)

6. Claims 2-3 were rejected under 35 U.S.C. 103(a) over Hellmuth in view of Moller et al., Real-Time Rendering, ("Moller"). Applicant respectfully asserts that Claims 2 and 3 incorporate all the limitations of amended independent Claim 1, and are now patentable over Hellmuth in view of Moller.

7. For an obviousness rejection to be proper, the Patent Office must meet the burden of establishing a *prima facie* case of obviousness. The Patent Office must meet the burden of establishing that all elements of the invention are disclosed in the cited publications, which must have a suggestion, teaching or motivation for one of ordinary skill in the art to modify a reference or combined references.⁵ The cited publications should explicitly provide a reasonable expectation of success, determined from the position of one of ordinary skill in the art at the time the invention was made.⁶

8. Here neither Hellmuth nor Moller suggest or teach a method for imaging in a confocal microscope as claimed in Claims 2 and 3, including performing an analytical measurement operation, as asserted in paragraphs 2-4 which are repeated herein in their entirety. Logically, neither Hellmuth nor Moller hint on any reasonable expectation of success in combination of Hellmuth and Moller to come up with the invention claimed in Claims 2-3. Therefore, the rejection should be withdrawn and Claims 2-3 should be allowed.

9. Claims 2-3 were rejected under 35 U.S.C. 103(a) over Hellmuth in view of U.S. Patent 5,963,247 to Banitt ("Banitt) and U.S. Patent 6,400,980 to Lemelson ("Lemelson"). For the reasons similar to those asserted in the preceding paragraphs, dependent Claims 4-5 depend off now allowable amended independent Claim 1 and are now allowable.

⁵ *In re Sang Su Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002).

⁶ *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970);

Amgen v. Chugai Pharmaceuticals Co., 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996);

Application No.:09/683,795
Amendment dated: October 15, 2003
Reply to Office Action of July 16, 2003

10. Claim 7 was rejected under 35 U.S.C. 103(a) over Hellmuth in view of U.S. Patent 6,538,732 to Drost et al ("Drost"). Claim 7 depends off now allowable Claim 6 and is allowable.
11. Claims 9-10 were rejected under 35 U.S.C. 103(a) over Hellmuth in view of U.S. Patent 6,575,969 to Rittman et al. ("Rittman"). For the reasons similar to those asserted in the preceding paragraphs, dependent Claim 9-10 depend off now allowable amended independent Claim 1 and are now allowable.

Allowance of Claims 1-11 is herein respectfully requested.

CONCLUSION

The Examiner is kindly invited to telephone the undersigned to resolve any questions to expedite the allowance of the pending Claims.

Respectfully submitted,



Maria Eliseeva, Reg. No. 43,328
Houston Eliseeva LLP
4 Militia Drive, Suite 4
Lexington, MA 02421
Phone: 781-863-9991
Fax: 781-863-9931

Dated: October 15, 2003